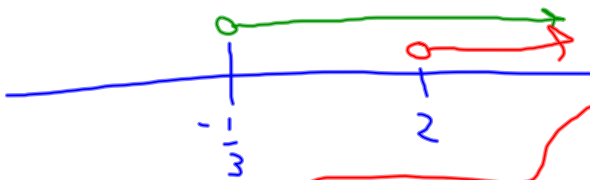


57 (2.5)

$$\frac{3x+1}{2x-4} > 0$$

$$3x+1 > 0 \text{ AND } 2x-4 > 0$$

$$x > -\frac{1}{3} \text{ AND } x > 2$$



$$3x+1 < 0 \text{ AND } 2x-4 < 0$$

$$x < -\frac{1}{3} \text{ AND } x < 2$$

$$x < -\frac{1}{3}$$

OR

$$x > 2$$

∪



$$(-\infty, -\frac{1}{3}) \cup (2, \infty)$$

$$\frac{x-2}{x-1} < 1$$

$$(x-1) > 0$$

$$x > 1$$

$$(x-1) \left(\frac{x-2}{x-1} \right) < 1(x-1)$$

$$x-2 < x-1$$

$$x < x+1$$

$$0 < 1$$

$$x > 1$$

$$(x-1) < 0$$

$$x < 1$$

$$(x-1) \left(\frac{x-2}{x-1} \right) > 1(x-1)$$

$$x-2 > x-1$$

$$x > x+1$$

$$0 > 1$$

~~✗~~

$$\frac{x-2}{x-1} < 1$$

$$\frac{x-2}{x-1} - 1 < 0$$

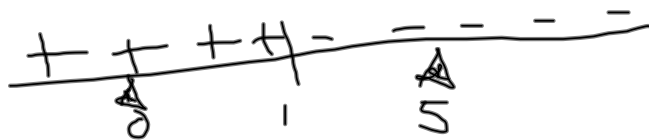
$$\frac{x-2}{x-1} - \frac{x-1}{x-1} < 0$$

$$\frac{x-2-x+1}{x-1} < 0$$

$$\frac{-1}{x-1} < 0$$

$$-1 \neq 0 \quad x-1=0 \text{ when } x=1$$

sign of
 $\frac{-1}{x-1}$



$$\frac{x-3}{x+3} \leq 5$$

(sign chart)

$$\frac{x-3}{x+3} - 5 \leq 0$$

$$\frac{x-3}{x+3} - 5 \left(\frac{x+3}{x+3} \right) \leq 0$$

$$\frac{x-3}{x+3} - \frac{5x+15}{x+3} \leq 0$$

$$-4x-18=0$$

$$-4x=18$$

$$x=-4.5$$

$$x+3=0$$

$$x=-3$$

sign of

$$\frac{-4x-18}{x+3}$$



$$\frac{(-4)(-6)-18}{-6+3} = \frac{24-18}{-3} = \frac{6}{-3} = -2$$

$$\frac{(-4)(-4)-18}{-4+3} = \frac{16-18}{-1} = \frac{-2}{-1} = 2$$

$$\frac{-4(0)-18}{0+3} = \frac{-18}{3} = -6$$

Ans
 $(-\infty, -4.5) \cup$
 $(-3, \infty)$
 $+ -4.5$

$$(-\infty, -4.5] \cup (-3, \infty)$$

